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(54) FORMATION OF III-V COMPOUND SEMICONDUCTOR BY EPITAXIAL GROWTH

(57)Abstract:

PURPOSE: To make it possible to epitaxially grow a II-V compound semiconductor of high quality by a method wherein an atomic layer, consisting of a group V element which is different from the group V element constituting the III-V compound semiconductor, is formed on an Si substrate.

CONSTITUTION: Using an Si substrate having the orientation slightly deviated from [100] as a substrate, and the Si substrate is inserted into an MOCVD device. After the surface of the Si, substrate has been cleaned, the temperature of substrate is set at 700W900° C, AsH₃ gas is introduced for five minutes as the gas containing the group V element which is different from the V-group element constituting GaP, and an As atomic layer is formed on the Si substrate. Then, after the AsH₃ gas has been switched to the PH₃ gas which is the gas containing a group-V element different from the group-V element constituting GaP, trimethylgallium is introduced as the gas containing the group III element which constitutes GAP, and the GAP is formed on the substrate.

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